AMENDMENTS TO THE CLAIMS

The listing of claims replaces all prior versions, and listings, of claims in the application:

Listing of Claims

1-8. (Cancelled).

9. (New) A method to identify an interference source in a mobile radio network, wherein a received signal consists of a wanted signal and a number of interference signals of which one is a dominating interference signal and where all signals include a known training sequence, said method comprising the steps of:

estimating the carrier and subtracting this carrier from the received signal;

forming a remaining interference signal and correlating said interference signal against known training sequences, resulting in a determined training sequence associated with the interfering signal;

finding an identification code of a possible interference source from said determined training sequence;

determining a number of candidates from said identification code, each of said candidates corresponding with a certain cell and the frequencies which are disturbed;

determining the timing offset for the frequencies used by said candidates; and

investigating if one or more of these frequencies have the same time offset as the interference signal, whereby the at least one candidate with the best offset matching of its frequencies in relation to other candidates is identified as the interference source.

10. (New) The method according to claim 9, wherein said step of forming a remaining interference signal comprises the steps of:

estimating both the training sequence and the data of the received signal;

generating a channel model by using said estimation of the training sequence and the data, said channel model being used to estimate the carrier; and

subtracting the estimated carrier from the received signal, leaving the remaining interference signal.

11. (New) The method as recited in claim 10, wherein said estimated carrier is produced by filtering the estimated bits through the channel model obtained by said channel estimation.

12. (New) The method as recited in claim 9, further comprising the steps of:

determining the time offset of the interfering signal;

determining the time offset of a set of frequencies from each of said candidates; and

comparing the time offset of said frequency set with the time offset of the identified interferer, the candidate having the frequencies which best match said frequency set being identified as the interference source.

13. (New) The method as recited in claim 9, wherein the serving cell uses a synchronization channel, and wherein the step of investigating if one or more of these signals have the same time offset as the interference signal further comprises the steps of:

determining the time offset of the interfered signal relative to the synchronisation channel; and

measuring the offset for all signals on said candidate´s frequencies in relation to said synchronization channel and, if the offset so measured are the same for a number of said signals on certain frequencies, these signals are assumed to have the same origin and the frequencies can be assigned to what is considered to be the interfering source.

14. (New) The method as recited in claim 9, further comprising the steps of:

calculating, for a defined time and for every training sequence, the percent of interference of all samples for which the training sequence had the strongest correlation; and,

graphing the percent of interference for all training sequences.

15. (New) The method as claimed in claim 14, wherein, for every sample, said step of graphing identifies which training sequence had the strongest correlation.

16. (New) The method according to claim 12, wherein, to eliminate false interference source candidates, said candidate cells contain different sets of frequencies, and wherein said method further comprises the step of removing all cells not using the frequency set whose offset corresponds to the offset of the identified interferer.